

WHAT IS CLAIMED IS:

1. An image recording apparatus for producing a finished sheet of recording medium with an image printed thereon, the recording apparatus comprising:

an image recording means with a platen drum, a clamper, a movable guide provided in an entrance side around said platen drum and a fixed guide adjacent to said movable guide;

5 a paper feed means with a recording medium wound up in a roll state for providing recording medium sheets upon cutting said recording medium for feeding out said recording medium wound up in the roll state, said paper feed means including a paper feed side cutter with a rotary blade and a fixed blade at said paper feed side, paper feed rollers and a paper feed side slide guide, said recording medium being held between said paper feed rollers and being passed between said rotary blade and said fixed blade of said paper feed side cutter and further being fed out between said paper feed rollers and on said paper feed side slide guide by a specified distance beyond said paper feed side, said image recording means clamper being provided in front of said paper feed side slide guide of said paper feed means and fixing a tip of said recording medium onto said platen drum, said recording medium being cut into a sheet of recording medium with said paper feed side cutter, said movable guide being provided on 15 a side of said platen drum opposite to an exit of the paper feed slide guide;

a thermal transfer ink ribbon with heatable coloring materials;

a thermal head for heating said coloring materials to transfer said coloring materials to said recording medium, said recording medium with an image already printed thereon being 20 releasable from said platen drum;

a paper discharge means with a paper discharge side slide guide having with a tip portion for receiving the recording medium with an image already printed thereon released from said platen drum when said platen drum is rotated in a discharge direction, said paper discharge slide guide being disposed in front of said movable guide of said image recording means, and said paper discharge means also having a paper discharge side cutter comprising a rotary blade and a fixed blade provided adjacent to an exit side of said paper discharge side slide guide, said discharge side cutter cutting a blank space, that was held by said clamper, of the released recording medium with an image already printed thereon;

a paper waste patting bar rotatably provided between an exit of said paper discharge side slide guide and said paper discharge cutter; and

a paper discharge roller for discharging the finished recording medium with an image printed thereon, said paper discharge roller being provided adjacent a discharge side of said paper discharge side cutter.

2. An image recording apparatus for recording an image by heating a thermal transfer type of ink ribbon with a thermal head and transferring the heated coloring material on a sheet-formed recording medium wound around a platen drum, the image recording apparatus comprising:

a recording medium wound up in a roll state;

a paper feed side cutter for cutting the recording medium wound up in the roll state into a sheet-formed recording medium;

a paper discharge side cutter for cutting off a non print space of the recording medium with an image already printed thereon, the non print space for being held by a clamper;

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a single interlocked driving system connected to said paper feed side cutter and said paper discharge side cutter to be synchronously operate said paper feed side cutter and said paper discharge side cutter by driving this drive system with a single motor.

3. The image recording apparatus of claim 2, further comprising a rotatable patting bar provided at a position opposite to an entrance of said paper discharge side cutter for patting off paper waste generated when the recording medium is cut off by the cutter, said rotatable patting bar being connected to said interlocked drive system to drive systems to operate said rotatable patting bar in synchronism with each of said paper feed side cutter and said paper discharge side cutter to pat off the paper waste for prevention of paper jamming.

4. The image recording apparatus of claim 2, further comprising
a platen drum;

a guide unit with a movable guide provided along an external periphery of said platen drum, said movable drive being connected to said interlocked drive system to link to the drive of said paper feed cutter and said paper discharge cutter whereby said movable guide is opened and closed in synchronism to operations of said paper feed cutter and said paper discharge cutter.

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5. The image recording apparatus of claim 3, further comprising

a platen drum;

a guide unit with a movable guide provided along an external periphery of said platen drum, said movable drive being connected to said interlocked drive system to link to the drive of said paper feed cutter, said paper discharge cutter and said rotatable patting bar whereby said movable guide is opened and closed in synchronism to operations of said paper feed cutter, said paper discharge cutter and said rotatable patting bar.

6. An image recording apparatus for recording an image by heating a thermal transfer type of ink ribbon with a thermal head and transferring the heated coloring material on a sheet-formed recording medium wound around a platen drum, said image recording apparatus comprising:

a tension switch means for switching tension of the ink ribbon to a larger value or a smaller value provided in the ribbon feed-out side, wherein said tension switch means is switched to a larger value when an image is to be recorded, and to a smaller value when the ribbon is to be positioned at its starting position.

7. The image recording apparatus of claim 6 further comprising: a tension switch cam (Fig 5, 133) on a thermal head up/down cam shaft for driving the thermal head, wherein said tension switch means can be switched in synchronism to upward or downward movement of the thermal head.

8. The image recording apparatus of claim 6, wherein said tension switch means comprises a main frictional clutch for controlling the tension to the larger value in synchronism to up/down movement of the thermal head and a sub frictional clutch for controlling the tension to the smaller value side.

9. The image recording apparatus of claim 7, wherein said tension switch means comprises a main frictional clutch for controlling the tension to the larger value in synchronism to up/down movement of the thermal head and a sub frictional clutch for controlling the tension to the smaller value side.

10. An image recording apparatus, comprising:

- a thermal transfer type of ink ribbon;
- a thermal head for heating coloring material of said ink ribbon;
- sheet-formed recording medium;
- a platen drum for receiving the recording medium for the recording medium to receive which received said coloring material;
- a wind-up core for winding up said ink ribbon; and
- a feed-out side core, said ink ribbon being wound around said feed-out side core before its use.

11. The ink ribbon of claim 10, wherein said ribbon wind-up core extends or shrinks

in a peripheral direction or and can be divided, whereby the ink ribbon wound up from the ribbon wind-up core can be removed by shrinking it in the peripheral direction or dividing it when the ribbon is used to its end.

12. The ink ribbon of claim 10, wherein a ribbon leader tape or a ribbon leader clip is attached to a tip of the ink ribbon.

13. The ink ribbon of claim 11, wherein a ribbon leader tape or a ribbon leader clip is attached to a tip of the ink ribbon.

14. The ink ribbon of any of claim 10, wherein said ink ribbon is automatically loaded, when the ink ribbon is to be set, so that a tip side of the ink ribbon is wound around the wind-up core.

15. The ink ribbon of any of claim 13, wherein said ink ribbon is automatically loaded, when the ink ribbon is to be set, so that a tip side of the ink ribbon is wound around the wind-up core.

16. An image recording apparatus ribbon cassette for recording an image by heating a thermal transfer type of ink ribbon with a thermal head and transferring the heated coloring material on a sheet-formed recording medium wound around a platen drum, said ribbon

cassette comprising:

5 a chip which operates when a power is supplied in a non-contact form to a portion of this ribbon cassette and also which incorporates therein a coil and a semiconductor circuit each capable of receiving and transmitting data in a non-contact form.

17. The ribbon cassette of claim 16, wherein data such as coloring characteristic parameters of the ink ribbon, types of the ink ribbon, and also data concerning the image recording apparatus using the ink ribbon are stored in said semiconductor chip in the assembly comprising the coil and the semiconductor circuit.

18. The ribbon cassette of claim 16, wherein parameters changing from time to time including one or more of a residual quantity of an ink ribbon or historical data of the image recording apparatus using the ink ribbon can be written in or read out from the semiconductor chip in which a coil and a semiconductor circuit are integrated with each other and data stored in the chip buried in the ribbon cassette can be used.

19. The ribbon cassette of claim 16, wherein parameters changing from time to time including one or more of a residual quantity of an ink ribbon or historical data of the image recording apparatus using the ink ribbon can be written in or read out from the semiconductor chip in which a coil and a semiconductor circuit are integrated with each other and data stored
5 in the chip buried in the ribbon cassette can be used.